



P.O. Box 787
51 Shoreland Drive
Key Largo, FL 33037

(305) 451-1139
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Living in Color: Ecotone Invertebrate Survival

MarineLab instructors will connect with students live from the Atlantic Ocean. We will be anchored by Rodriguez Key which is surrounded by a unique ecotone comprised of an algal shoal. Students will examine invertebrates hiding within Neogoniolithon algae to analyze and discuss color adaptations such as camouflage, mimicry, warning and attraction. We will observe critters such as brittle stars, crabs, sea cucumbers, mantis shrimp and sea biscuits.

Grade Level: 4-12

Timing: 45-60 minutes

Materials:

ID sheet (not a required)

STANDARDS SUPPORTED

Next Generation Science Standards:

Featured Science Practice → constructing explanations

Featured Cross Cutting Concept → structure and function

Disciplinary Core Ideas → LS1.A. Structure and Function, LS2.A. Interdependent Relationships in Ecosystems, LS4.B-C Natural Selection and Adaptation

MS-LS1-4 Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively

MS-LS4-4. Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment

MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.



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HS-LS4-5. Evaluate the evidence supporting claims that changes in environmental conditions may result in (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.

Next Generation Sunshine State Standards:

SC.4.L.16.3

Recognize that animal behaviors may be shaped by heredity and learning.

SC.4.N.1.7

Recognize and explain that scientists base their explanations on evidence.

SC.5.L.15.1

Describe how, when the environment changes, differences between individuals allow some plants and animals to survive and reproduce while others die or move to new locations.

SC.5.L.17.1

Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics.

SC.5.N.2.1

Recognize and explain that science is grounded in empirical observations that are testable; explanation must always be linked with evidence

SC.7.L.15.3

Explore the scientific theory of evolution by relating how the inability of a species to adapt within a changing environment may contribute to the extinction of that species.

SC.8.N.1.6

Understand that scientific investigations involve the collection of relevant empirical evidence, the use of logical reasoning, and the application of imagination in devising hypotheses, predictions, explanations and models to make sense of the collected evidence.

SC.912.L.17.4

Describe changes in ecosystems resulting from seasonal variations, climate change and succession.

SC.912.L.17.16

Discuss the large-scale environmental impacts resulting from human activity, including waste spills, oil spills, runoff, greenhouse gases, ozone depletion, and surface and groundwater pollution.



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Ocean Literacy Principles:

5d: Ocean biology provides many unique examples of life cycles, adaptations and important relationships among organisms (symbiosis, predator-prey dynamics, and energy transfer) that do not occur on land.